

Figure 1

$$R \longrightarrow Si(OR^1)_3 + 3H_2O \longrightarrow R \longrightarrow Si(OH)_3 + 3R^1OH$$

Condensation to bond to Silica Substrate

$$R$$
—SiOH + HOSi — R —Si—OSi + H_2O

Figure 2

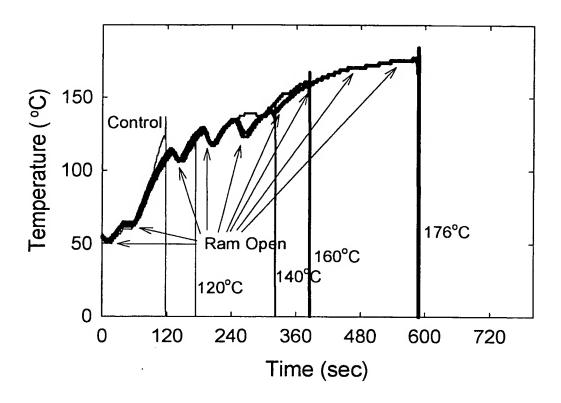
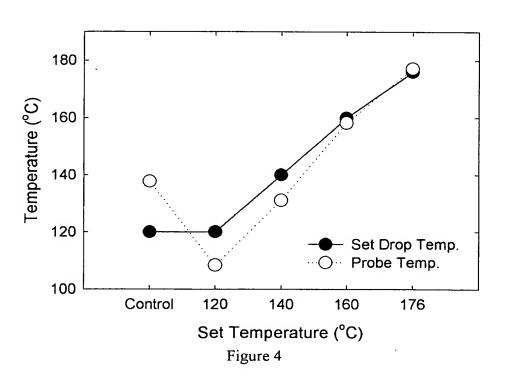


Figure 3



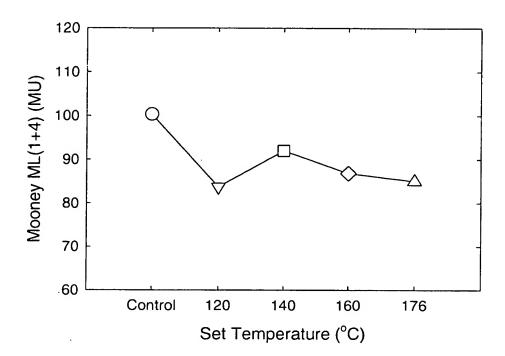


Figure 5

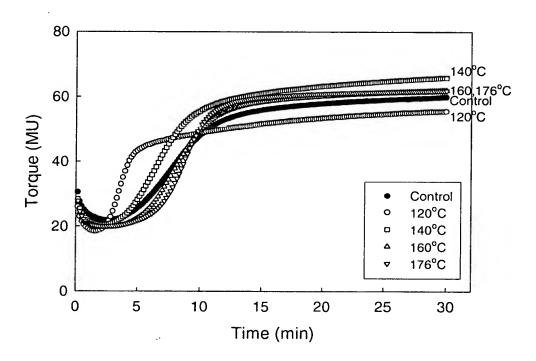


Figure 6

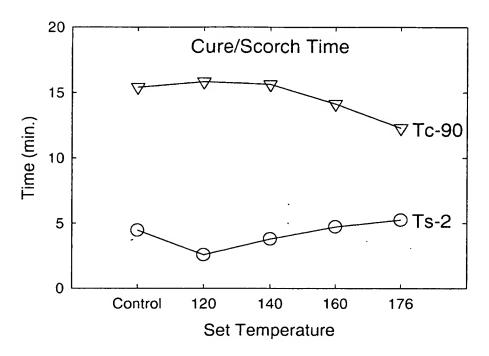


Figure 7

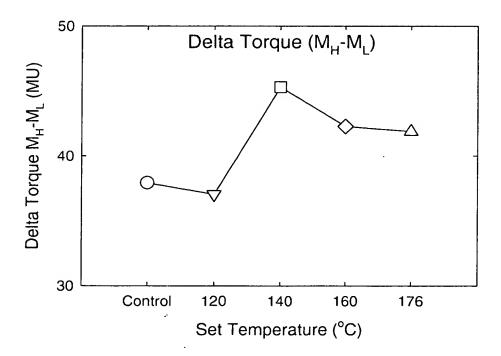


Figure 8

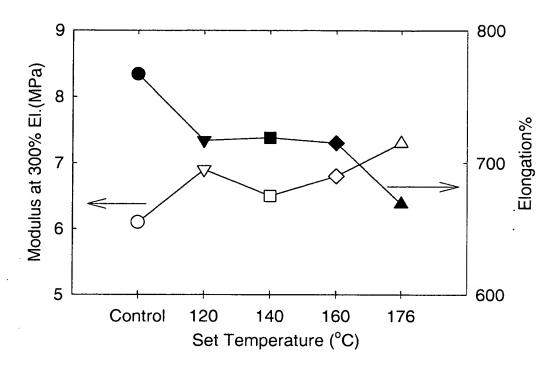


Figure 9

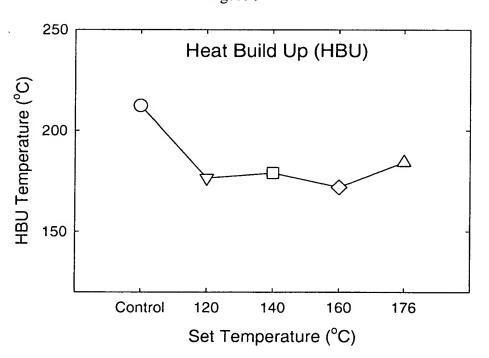


Figure 10

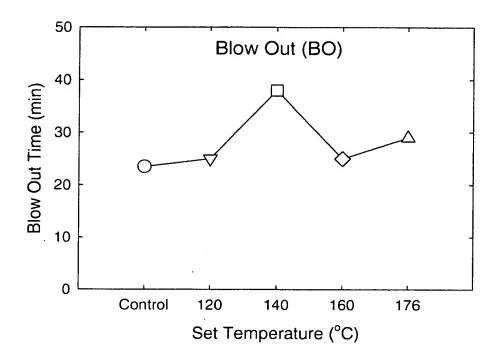


Figure 11

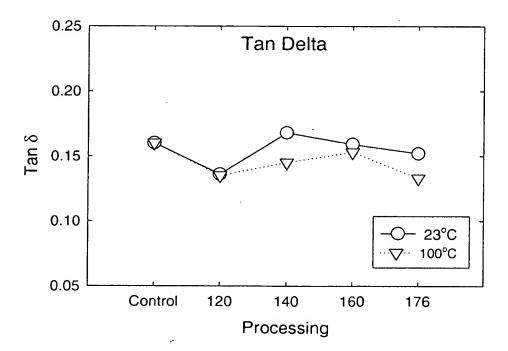


Figure 12

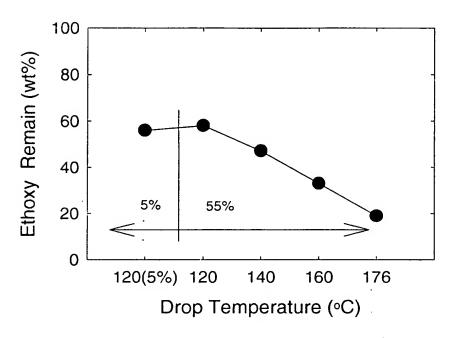


Figure 13

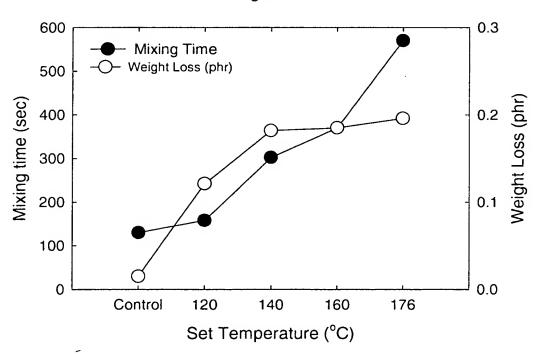


Figure 14